



NATIONAL SCIENCE FOUNDATION

Notice of Request for Revision of an Information Collection

AGENCY: National Science Foundation.

ACTION: Revision of an approved information collection and request for comments.

SUMMARY: The National Science Foundation (NSF) is announcing plans to request a revision for the approved collection of research and development data through the CISE REU Sites and Supplements Evaluation. In accordance with the requirement of the Paperwork Reduction Act of 1995, we are providing opportunity for public comment on this action. After obtaining and considering public comment, NSF will prepare the submission requesting that OMB approve the revision of this collection for no longer than 3 years.

DATES: Written comments on this notice must be received by [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*] to be assured of consideration. Comments received after that date will be considered to the extent practicable.

FOR FURTHER INFORMATION CONTACT: Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314; telephone 703-292-7556 or send email to splimpto@nsf.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including federal holidays).

SUPPLEMENTARY INFORMATION:

Title of Collection: Computer and Information Science and Engineering (CISE) Research Experiences for Undergraduates (REU) Sites and Supplements Evaluation.

OMB Approval Number: 3145-0266.

Expiration Date of Current Approval: April 30, 2025.

Type of Request: Revision of an approved information collection.

Abstract: Every year the National Science Foundation (NSF) funds hundreds of Research Experience for Undergraduates (REU) activities through its REU program. The Directorate of Computer and Information Science and Engineering (CISE) is seeking to evaluate the effectiveness of the CISE REU program.

The REU program provides undergraduate students at US higher education institutions with opportunities to work with faculty on a research project. They can take the form of REU Sites or REU Supplements. REU Sites are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Supplements are included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.

By offering this opportunity to undergraduate students, the REU program seeks to expand student participation in all kinds of research — both disciplinary and interdisciplinary — encompassing efforts by individual investigators, groups, centers, national facilities, and others. The REU experience integrates research and education to attract a diverse pool of talented students into careers in science and engineering, including teaching and education research related to science and engineering.

The current data collection project intends to measure the impact of the undergraduate REU Sites and REU Supplements programs sponsored by NSF CISE. The project will conduct online surveys to track NSF CISE REU participants over time — including pre-program, post-program and one-year post-program measurement -- alongside two comparison groups: (1) students participating in other undergraduate research, and (2) students who do not participate in research. The researchers will supplement REU participants' survey data with basic REU information and perceptions

of impact from NSF CISE REU Principal Investigators (PI's). The evaluation and research questions guiding this project include the following:

1. Who are the students reached through the NSF REU Program, and how do they compare to students participating in other types of research experiences and to students in the broader CISE community?
2. How do CISE REU Sites and REU Supplements differ from other research experiences (e.g., other REUs, internships, and independent research projects)?
3. To what extent are the goals of the NSF REU Program being met by the individual projects within the program, including recruitment and retention of students in science and engineering fields and increasing diversity in these fields?
4. In what ways does participation in REU Sites, REU Supplements, internships, and/or other independent research experiences impact student attitudes and pathways to CISE careers and other research experiences?
5. In what ways does participation in the REU Sites and REU Supplements impact recruitment and retention of students who are underrepresented in computing?

Ultimately, the findings from this data collection will be used to understand and improve the impact of the CISE REU program, including increasing recruitment and retention in science and engineering and promoting a diverse group of computing/STEM careers.

Use of the information: The information collected through this survey will be used to evaluate the NSF CISE REU Program.

Respondents: There will be four types of respondents: NSF CISE REU Site and Supplement participants, a comparison group of undergraduate students who participate in other, non-NSF REU research experiences, a comparison group of undergraduate students who do not participate in research, and NSF CISE REU PI's.

NSF CISE REU participants will include undergraduate students who participate in REU projects in which the project's Principal Investigator chooses to use NSF-sponsored program evaluation services. Participants from the two comparison groups will be identified and recruited from a pool of undergraduates in computing fields who have participated in a prior survey of the Computing Research Association and have agreed to be contacted for future data collection. The participating NSF CISE REU PI's will also complete PI REU Information Forms at the beginning and end of their REUs.

Estimated number of respondents: The study's data collection activities will occur over a span of 18 months. It is estimated that during this time, there will be approximately 2,000 NSF CISE REU survey respondents, 1,000 comparison group survey respondents, and 200 NSF CISE REU PI respondents, for a total of 3,200 respondents.

Average time per reporting: Each online survey for REU participants and comparison group respondents is designed to be completed in 25 minutes or less. Each REU PI Information Form is designed to be completed in 10 minutes or less.

Frequency: Each **NSF CISE REU participant** will be asked to complete three surveys: (1) a pre-test before they begin their REU project; (2) a post-test, after their REU ends; and (3) a one-year follow-up survey. Within the data collection timeline for this project, this will allow for one full data collection cohort, plus a subset of Cohort 2 summer REU participants who will only complete a pre-test and a post-test, but no follow-up survey. Each **comparison group participant**, including both those with a different research experience and those with no research experience, will be asked to complete a pre-test

survey and a follow-up survey occurring approximately one year later. There will be one full data collection cycle for comparison group participants. Each **NSF CISE REU PI** will complete a Time 1 PI REU Information Form before their REU begins and a Time 2 REU PI Information Form when their REU ends. There will be two data collection cycles for the REU PIs.

Estimate burden on the public: **For REU participants**, in the 18 months of data collection, there will be one cohort of complete data collection (pre-test, post-test, and follow-up) and one cohort with a partial data collection cycle (pre-test and post-test only). Based on an expected 1,000 REU participant respondents per cohort, it is expected that a total of approximately 2,000 REU respondents will complete a 25-minute pre-survey in the project. Of these 2,000 REU participant respondents, we expect that approximately 80%, or 1,600, will complete a 25-minute post-survey. For the follow-up survey, only the 1,000 REU participants from the first year's data collection cohort would be able to complete the survey within the time range of the study. It is expected that approximately 50% of these respondents, or $N = 500$, will complete a 25-minute one-year follow-up survey. This would result in a total of 4,100 25-minute surveys completed by REU respondents, for a total of 1,708 burden hours for this subset of respondents.

For **comparison group participants**, there will be just one cohort of data collection (pre-test and follow-up). It is expected that a total of 1,000 of these respondents will complete a 25-minute pre-survey in the project. Of these, approximately 50%, or 500, are expected to complete a 25-minute one-year follow-up survey. This would result in a total of 1,500 surveys completed by comparison group respondents, for a total of 625 burden hours.

For **REU PI's**, there will be 18 months of complete data collection (Time 1 and Time 2 REU PI Information Forms). Based on an expected 100 NSF CISE REU PI's

choosing to receive evaluation services in each of the two years, It is expected that a total of approximately 200 REU PI's will complete both the Time 1 and Time 2 PI REU Information Forms (each one takes 10 minutes to complete). This would result in a total of 400 10-minute forms completed by REU PI's, for a total of 67 burden hours for this subset of respondents.

Together, the total estimated survey burden for the project is 2,400 hours. The calculations are shown in Table 1.

Table 1. Estimated Survey Burden

Category of Respondent	Number of Cohort 1 Responses	Number of Cohort 2 Responses (Partial Year)	Participation Time	Burden
REU participant Pre-survey	1,000	1,000	25 mins each	833.33 hours
REU participant Post-survey (80% of original)	800	800	25 mins each	666.67 hours
REU participant Follow-up survey (50% of original)	500	Not conducted	25 mins each	208.33 hours
Comparison participant Pre-survey	1,000	Not conducted	25 mins each	416.67 hours
Comparison participant Follow-up survey (50% of original)	500	Not conducted	25 mins each	208.33 hours
REU PI Time 1 Information Form	100	100	10 mins each	33.33 hours
REU PI Time 2 Information Form	100	100	10 mins each	33.33 hours
Total surveys completed	4,000	2,000	400 @ 10 min 5600 @ 25 mins	2,400 hours

Comments: Comments are invited on:

1. Whether the proposed collection of information is necessary for the evaluation of the CISE REU Sites and Supplements Program.
2. The accuracy of the NSF's estimate of the burden of the proposed collection of information.
3. Ways to enhance the quality, utility, and clarity of the information on respondents, including through the use of automated collection techniques or other forms of information technology.

Dated: October 7, 2022.

Suzanne H. Plimpton,

Reports Clearance Officer,

National Science Foundation.

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